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ABSTRACT

This paper presents a system designed to measure group role behavior and the direction and degree of subgroup interaction during small group meetings. The system utilizes file classifications of role behavior subdivided into 11 behavior categories. Data are collected in sample observations using live recorders or VTR equipment. Data analysis yields the degree of participation in the group process, the role behavior characteristics of the participating subgroups, and enables the researcher to graphically profile total behavior. The paper presents in detail one specific example of the system in use and suggests applications for others uses. (Author)

A SYSTEM FOR RECORDING INTERACTION BEHAVIORS IN GROUP DISCUSSIONS

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In recent years there has been an increasing proliferation of systems for recording observations of individual and group behavior, predominantly in teaching situations involving total group instruction. Little has been done that is particularly appropriate for group discussion settings, especially those not involving a single status leader.

The system described in this paper (the Cryles System) was developed by two of the co-authors, Wiles and Cryan. It is an interaction analysis system with certain affinities to such systems as Flanders' system for recording classroom behavior and Blumberg's system for analyzing supervisory conference behavior.

Its initial development came from a request to help assess a project at Syracuse University known as the TTT program.

Part of the effort in the "Training of Trainers of Teachers" included the activities of "Action Teams" composed of three identifiable sub-groups: University Personnel (Professors and graduate students), Public School Personnel (Teachers) and Public School Students. These teams met regularly to develop curricula and instructional packages for use in the public schools. They were thus task oriented. However, in addition to the task-orientation the meetings were intended to develop greater awareness of the roles of all members as teachers of teachers.

It was felt that there should be variations in the behavior of individuals in group discussion settings dependent partly on their sub-group membership.

Analyzing the actual behavior of sub-groups in Action Team meetings gave rise to an eleven category system within five major classifications. These categories permit an observer to classify both the behavior which takes place and the interaction of any sub-group with any other sub-group.

Being generated by this particular assessment task, the system is described here in terms of the sub-group notion. It could just as readily be used with the identification of individuals in a group discussion and the charting of their behaviors and interactions.

The classifications and categories follow:

CLASSIFICATION I

Category 1: Supportive Valueing raises the other's status, rewards or encourages, shows satisfaction, releases tension, conveys acceptance or understanding--is person oriented.

CLASSIFICATION II

Category 2: Gives Information is self initiated. The giving of objective information, orienting, summarizing, or giving direction.

Category 3: Gives Suggestions is self initiated. The giving of suggestions, is action oriented and implies the autonomy of the person towards whom the suggestion is directed.

Category 4: Gives Expression of Feeling is self initiated. The expression of feeling is evident when evaluating, judging, or analyzing--is task-oriented.

CLASSIFICATION III

Category 5: Responds with Information is in response to obvious external stimulus. The orienting, providing of objective information, summarizing, giving direction, repeating, clarifying, or confirming information and/or ideas.

Category 6: Responds with Suggestions is in response to an obvious external stimulus. The offering of suggestions, implies the autonomy of the person, or group, towards whom the suggestion is directed--is action oriented.

Category 7: Responds by Expressing Feelings is in response to an obvious external stimulus. The expression of feeling is evident when evaluating, judging or analyzing--is task oriented.

CLASSIFICATION IV

Category 8: Asks for Information is requesting clarification of, or orientation about a problem--is factually oriented and not concerned with process.

Category 9: Asks for Suggestions is requesting ideas as to direction or possible ways of action--may be concerned with process.

Category 10: Asks for Expression of Feeling is requesting the expression of feeling, evaluation, a valued analysis, or personal judgment.

CLASSIFICATION V

Category 11: Negative-Critical Valueing is negative judgment, or aggressive or tension-producing behavior--tends to deflate the status of others.

People function within groups as supporters, as givers, as responders, as askers, or as detractors. Functioning in this way people in groups process information, establish directions and achieve goals. The interaction of these functions, or behaviors, creates actions and reactions among the group members and allows information to be processed at differing levels and with differing purposes of communication.

CLASSIFICATION I Supportive Behavior. These levels of functioning are referred to here as classifications. The first of these classifications is Supporting and consists of only one specific behavior category, that of Supportive Valueing.

Category 1: Supportive Valueing raises the other's status, rewards or encourages, shows satisfaction, releases tension, conveys acceptance or understanding--is person oriented.

An example of this category might be "that idea of yours, Jim, really focuses in on the issue." The intent of this statement is to support the person. Comments made with the intent to state agreement or to state one's own position are not considered to be within category 1, but are behaviors within category 2.

CLASSIFICATION II Giving refers to the function of a group member sharing information, suggestions or opinions on his own initiative but not intended as a response. This classification is sub-divided into the following categories of behavior:

Category 2: Gives Information is self initiated. The giving of objective information, orienting, summarizing, or

giving direction.

Any item of information or statement of position falls within this category, such as "Jimmie's psychological evaluation revealed high emotionalism. I agree with the counselor in this matter," or "The teachers and students, then, have both rejected the plan." Directions such as, "Our task today is to vote on the plan", also are representative of this category.

Category 3: Gives Suggestions is self initiated. The giving of suggestions is action oriented and implies the autonomy of the person towards whom the suggestion is directed.

Behaviors which imply taking some form of action, such as "A better way of doing it might be to involve the students in the initial stages of the survey," and that are not meant to be directives, are within this category. Verbal behaviors within this category are offered to the group for consideration.

Category 4: Gives Expression of Feeling is self initiated. The expression of feeling is evident when evaluating, judging, or analyzing--is task-oriented.

Expression of feeling is distinguished from information giving (Category 2) by the evidence of feeling, or personal value placed upon the issue. An example might be, "I am personally committed to that plan," or "I dislike the way some members of this group have been operating."

CLASSIFICATION III Responding refers to the function of one group member reacting to an external stimulus coming from another member. The response need not be immediately preceded by the stimulus, but some obvious connection must be

apparent. The sub-divisions of this classification are:

Category 5: Responds with Information is in response to obvious external stimulus. The orienting, providing of objective information, summarizing, giving direction, repeating, clarifying, or confirming information and/or ideas.

Category 6: Responds with Suggestions is in response to an obvious external stimulus. The offering of suggestions, implies the autonomy of the person, or group, towards whom the suggestion is directed--is action oriented.

Category 7: Responds by Expressing Feelings is in response to an obvious external stimulus. The expression of feeling is evident when evaluating, judging or analyzing--is task oriented.

The content of these categories differs not at all from the content of the categories in Classification II. The difference is in the context in which the verbal behaviors occur. The behaviors in Classification II are the result of internal stimuli whereas the behaviors in Classification III result from externally occurring stimuli. Examples for each of the three categories may be formed by adding, "Since you've asked me, I would have to say..." to each of the examples cited in Categories 2, 3, and 4.

CLASSIFICATION IV: Asking is the function of one group member seeking from another member of the group specific responses representative of Classification III. The categories within Classification IV are:

Category 8: Asks for Information is requesting clarification of, or orientation about a problem--is factually oriented and not concerned with process.

Category 9: Asks for Suggestions is requesting ideas as to direction or possible ways of action--may be concerned with process.

Category 10: Asks for Expression of Feeling is requesting the expression of feeling, evaluation, a valued analysis, or personal judgment.

CLASSIFICATION V Non-supportive Behavior. Behaviors occurring in this single category classification tend to express negative feelings or negative judgment.

Category 11: Negative-Critical Valueing is negative judgment, or aggressive or tension-producing behavior--tends to deflate the status of others.

Behaviors which are seen to detract, criticize or otherwise impede the obvious direction or progress of the group belong in Category 11. Comments such as "That was a dumb idea," or "You didn't think that through before you spoke," are examples.

Sarcasm and ridicule are further examples of this category which deals with personal reference rather than information. Comments such as "I disagree with your idea," or "I don't think I believe that," are concerned with ideas and are not person oriented and as such belong respectively in Categories 1 and 3.

We see the above as being only one dimension of this system. The second dimension is the flow of the interaction

between the members of identifiable sub-groups, or if appropriate, among the individuals of this group. By recording not only the observed role behavior, but also the direction of the behavior it becomes possible to identify toward which sub-group those interactions are directed. A sample of such observed behaviors might be as follows:

a. Sub-group "A" members interact most frequently with members of sub-group "B."

b. Sub-group "B" members most frequently interact with other members of sub-group "B."

c. Sub-group "C" members directed their behavior largely toward the group as a whole. About eighty percent of their supportive (Classification I) behavior was directed toward sub-group "A."

Procedurally the recording of data, accomplished by either live recorders or through VTR equipment involves the tallying of each group member's observed category behavior. The tally is placed in whichever cell on the recording matrix (See Figure 1) indicates the membership of initiator of the behavior and the membership of the recipient of the behavior. The matrix includes cells appropriate for the tallying of behavior directed toward the entire group.

Sustained behavior or the length of time one's behavior extends is not considered. Thus, the only time element involved is the length of time of the total observation. The focus is on behavior. Raw data are compiled and cell totals are entered on a tabulation matrix (See Figure 2). Totaled rows reveal the role behavior characteristics of the entire group as well as each sub-group, and enable the researcher to graphically profile

the observed behavior in the following ways:

a. The percentage of individual category behavior exhibited by the total group.

The knowledge of total group behaviors can assist the evaluator or the group, in determining whether the behaviors that can be expected of the group in view of group goals, are actually being exhibited by the group members. Periodic re-evaluations enable the observer to measure group behavior changes or group behavior patterns.

b. The percentage of individual category behavior exhibited by each sub-group.

To know the profile of behavior exhibited by each sub-group enables the observer or possibly the sub-group members themselves, to examine the roles the sub-groups are actually taking in the group process. Should the total group be achieving (or not achieving) the goals it has set for itself, an examination of the sub-group roles could possibly shed light on the reasons for the group's success, or lack of it, and enable the sub-groups to consciously strive to attain new goals of behavior.

c. Individual category behavior of each sub-group as a percentage of the total role behavior for that sub-group.

Analysis might show that one sub-group, though frequently asked for suggestions and feelings, responds only with information, or perhaps one sub-group frequently asks for information, but is responded to entirely with feelings. Such data, not perceived by the group itself, could shed light on the lack of group progress, or the presence of group frustration.

On the other hand, the pattern of behavior of one successfully operating group might be profitably compared to the behavior pattern of a similarly constructed, but unsuccessful, group in order to investigate the differences in sub-group participation or role behaviors.

d. Individual classification behavior of each sub-group as a percentage of the total role behavior for that sub-group.

Data may show that one sub-group is behaving primarily in the responding function (Classification III), but is rarely behaving in a giving or asking function. This analysis system would enable such information to be readily perceived. Thus it becomes possible not only to determine the functioning of the total group but also to determine the functioning of a sub-group.

e. The percentage of incidents of sub-group behaviors dealing with the conveying of ideas through information, suggestions or opinions.

To know the level at which data are handled by the group or sub-groups is often revealing. If the purpose of a group is seen as resolving an issue, it may become important to determine the extent to which the group deals with the matter through the exchange of information, through the exchange of suggestions, or the exchange of feelings. The question then, at this point, might be which sub-group performed at which levels. Perhaps the issue was resolved through the behavior pattern of sub-group A requesting information of sub-group B with sub-group C giving suggestions to the entire group and behaving in a supportive manner towards sub-group A. To illustrate a total group's

failure to utilize one level of handling data one can visualize a circumstance whereby upon analysis of the group's behavior it is found the group dealt with the issue only through the exchange of suggestions and opinions entirely neglecting the sharing of information.

Totaled columns reveal interaction characteristics of the entire group as well as each sub-group and enable the researcher to graphically profile the interaction of the meeting in the following ways (also discussed above):

a. The total number of times a member of a particular sub-group interacted with any group member expressed as a percentage of total interactions.

b. The total number of times a member of a particular sub-group interacted with any group member expressed as a percentage of total sub-group interactions.

The system was first used in an attempt to evaluate the quality of interaction in task oriented discussion groups involved in the Syracuse TTT Project (Trainers of Teachers of Teachers). The phase of the project with which this system dealt involved "Action Teams" composed of public school teachers, public school students and university personnel. These three sets of personnel were identified as sub-groups within the context of the System. A representative of the community was added to each of the Action Teams near the end of the period of evaluation, but due to their brief and belated appearance they were not treated as a separate sub-group.

The analysis of the behaviors of the Action Teams provided project administrators with a means of assessing the actual behavior of team members in terms of overall project

goals for the Action Teams.

The underlying goal of the Action Team approach was to increase the potential of public school teacher and university personnel sub-groups as change agents in the training of teachers. The outcome of such a goal was to facilitate an awareness on the part of the public school teachers of their role in the eventual training of teachers and to increase the effectiveness of the interaction between university personnel and their university students training to become teachers.

The inclusion of students as a sub-group of the Action Teams was seen as an opportunity for the teachers and professors to obtain direct feedback on their ideas concerning the improvement of classroom instruction. Concurrently, the Action Team setting also enabled a direct flow of communication between the teacher and the university sub-groups concerning their perceived roles and problems.

The system did graphically illustrate the flow of communication within the context of the Action Teams (See page 16).

To assess the degree to which the Action Teams were achieving their own internalized goals, a role perception questionnaire was utilized to determine the role behavior categories of the Cryles System which each of the sub-groups regarded as most appropriate to their sub-group's role. These data were tabulated and compared to the category behaviors which the sub-groups exhibited. This same strategy was employed to assess sub-group member expectations of the category

behaviors of the members of the other sub-groups. We can perhaps better illustrate this procedure by including at this point the tabulations of one of the sub-groups.

(1) Self Perceived Behaviors of University Personnel Sub-Group

Category Behavior	Perceived	Actual
Most Appropriate	Responds with Suggestions Responds with Information Gives Information	Gives Information Asks for Information Responds with Information
Least Appropriate	Gives Feelings Asks for Feelings Asks for Suggestions	Asks for Suggestions Responds with Suggestions

(2) University Personnel Behaviors Expected by Teachers

Category Behavior	Perceived	Actual
Most Appropriate	Gives Information Gives Suggestions Responds with Information	Gives Information Asks for Information Responds with Information
Least Appropriate	Asks for Feelings Asks for Suggestions	Asks for Suggestions Responds with Suggestions

(3) University Personnel Behaviors Expected by Students

Category Behavior	Perceived	Actual
Most Appropriate	Gives Suggestions Gives Feelings Responds with Information	Gives Information Asks for Information Responds with Information
Least Appropriate	Responds with Feelings Responds with Suggestions	Asks for Suggestions Responds with Suggestions

It seems appropriate to attempt to clarify any ambiguities the reader may have of the System by talking through an interpretation of the data included on the composite tabulation matrix of all Action Team observations (See Figure 3).

The explanation of the nomenclature of the Tabulation Matrix is on its reverse side. As we move through the matrix, however, the definitions of the marginal data will be discussed.

The numbers appearing in the cells of the matrix refer to the numerical sum of those behaviors observed in all the observations made of the Action Teams. For example, there were 116 (cell TU) incidents of the teachers exhibiting supportive behavior (Category 1) toward the University Personnel and 55 (cell ST) incidents of students responding to Teachers with Information (Category 5).

The marginal column titled Total refers to the total incidents of a particular role behavior noted in all observations. For example, there were 185 incidents of the self initiated giving of feelings (Category 5). The row towards the bottom of the matrix titled Total refers to the total number of times a particular behavior was directed from one sub-group to another sub-group or to the group as a whole. To illustrate, there were 113 incidents of the teachers behaving in some way towards the entire group (TG) and 409 incidents of teachers directing behaviors toward the university sub-group or toward members of that sub-group.

The cell at the point where the Total column and row intersect indicates the total number of behaviors (1987) observed during all the Action Team observations. This figure will be referred to later when discussing the interpretation of column A and row B.

The row D, located just below B at the bottom, gives the

total number of interactions for each sub-group. The teacher sub-group interacted 1053 times, the university sub-group 750 times, and the students 184 times. These sub-group interaction totals are used when obtaining the data in columns C and C_x, and will also be referred to later.

Taking only Category 5, Responding with Information, and classification III, Responding, as examples let us refer once again to the composite Tabulation Matrix itself. There were, as we see in the total cell for Category 5, 386 incidents of Responding with Information, or, as column A indicates, 19.4% of all observed behavior (1987 incidents) was of that category. This information reflects the amount of Category 5 behavior observed in relation to all the behaviors of the total group.

To find the extent to which each sub-group exhibited that same behavior, we move across the marginal data cells to column A_x. This data cell reveals that of all Category 5 behavior, approximately 50% of it was accounted for by the teacher sub-group, and each of the other sub-groups accounting for approximately 25% of the Responding with Information behavior. These figures are found by dividing the total number of incidents for that behavior (386) into the total number of incidents of that behavior for each sub-group. For example, the student sub-group responded with information to University Personnel 40 times, to Teachers 55 times, and to other members of their own sub-group twice, for a total of 97 incidents of Category 5 behavior, and 97 is approximately 25% of 386.

Retaining that student sub-group total for Category 5

behavior (97 incidents) and moving to column C, we can find what percentage of the total behavior of the student sub-group was responding with information (Category 5) by dividing that figure (97) by the total number of incidents of behavior exhibited by that sub-group (DS). In this case DS is 184, the total number of student behaviors observed, and dividing that figure into 97 indicates to us that about 53% of all student sub-group behaviors were of the Responding with Information type, Category 5.

Recall that Category 5 is only one of three category behaviors in Classification III. To find the total number of classification behaviors for the entire group, we can simply add the total cells for the categories within the particular classification. Thus by adding the totals for categories 5 (386), 6 (35), and 7 (145) we find that there were 566 incidents of Classification III (Responding) behaviors exhibited by the total group. To determine the amount of classification behavior exhibited by a particular sub-group, we can add all the observation totals found in each cell within the matrix block reflecting that sub-group and the particular classification.

For simplicity, refer to the student sub-group block within Classification III. As mentioned above, there were 97 incidents of student Category 5 behavior. There were no observed incidents of student Category 6 behavior (Responding with Suggestions), and there are 20 incidents of student Category 7 behavior for a total of 117 incidents of observed student Classification III behavior.

To find what percent of student sub-group behavior fell within a particular classification, we divide the sub-group interaction total (for the students DS was 184) into the total sub-group behaviors for that classification. In this case, then, it is 184 into 117, for a C_x figure of 63.5%, or, to be clearer, 63.5% of all student sub-group behaviors were of the responding classification.

The above has been an interpretation of the horizontal dimension of the matrix, and has dealt with the analysis of role behaviors by category and by classification, by group and by sub-group. As has been pointed out earlier in this paper, this system also allows the observer to analyze the flow of communication of the group and within the group. To illustrate, let us focus on the marginal data at the bottom of the composite Tabulation Matrix.

Row B has been discussed earlier, as has the information contained in the D row. To get a better picture of the entire set of data, however, a broader interpretation seems in order.

Row B indicates that 20.6% of the Action Team communication flow as from members of the teacher sub-group to members of the university sub-group (TU), 20% of the flow was between members of the teacher sub-group (TT) and that 19.2% of all the communications were from members of the university sub-group to members of the teacher sub-group (UT).

If we sum all the Row B figures for the student sub-group, we find that only 9.2% of all group communications were initiated by them. To determine the degree to which the other

sub-groups directed behaviors toward the students, we can refer to the TS and US cells of Row B. In doing so, we note that 6.7% of all group interactions were directed by teachers toward the students and that 3.6% of all group interactions were from university sub-group members to students. Following this same strategy we note that 11.8% (TG + UG + SG: Row B) of all interactions were directed to the group as a whole.

The D_X data allows us to determine the manner in which any sub-group interacted. The information is found by dividing the sub-group interactions for a particular sub-group cell by the total interaction for that sub-group. Looking at the interaction behaviors of the university personnel, for example, we see that university sub-group members directed behaviors toward other group members (DU) 750 times. The total interaction rows for the university sub-group indicate that members of the sub-group directed communication toward the entire group (TG) 116 times, toward other members of their own sub-group (UU) 180 times, toward members of the teacher sub-group (UT) 382 times, and 72 times toward members of the student sub-group (US). Division of each of these figures by DU (750) reveals that 15.5% of the university sub-group members' behaviors involved speaking to the group as a whole, 24% involved speaking to each other, 50.9% of the interaction with teachers, and 9.6% of their interaction was directed to members of the student sub-group.

Such is the information about the role behavior and the flow of communication of a group that can be obtained through

the use of this system. Inter- and intra-observer reliability in recording data for this system has been established at .89 and .91 respectively.

There are some concerns that the emphasis on total group settings in many interaction analysis systems tends to encourage the continuation and extension of total group teaching practices. The development of systems better adapted to recording other types of group interaction is seen as most advisable. This system, with its emphasis on sub-units of a total group moves toward that end. It enables teachers, administrators, counselors and evaluators to analyze and graph the group processes which they have facilitated or of which they are a part.

Whenever a group is able to articulate its behavioral goals, this system, or a modification of it, will enable an observer to chart behavioral changes over a period of time or to describe the group behavior exhibited at a particular point in time. As suggested above, this behavioral analysis of a group, using this system, will provide information regarding the flow of communication as well as the role behaviors exhibited by the group's sub-groups.

Interaction Analysis System for the Identification of Role Behavior

THE RECORDING MATRIX

S- Student, T- Teacher, U- University Personnel, G- The Entire Group

Role Behavior Category	TG	TU	TT	TS	UG	UU	UT	US	SG	SU	ST	SS	Total	T	U	S	
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
Totals																	
	Total T =				Total U =				Total S =								

FIGURE 1

TABULATION MATRIX

Interaction Analysis System for Identification of Group/Sub-Group Role Behavior

Group Composition: T = _____people
U = _____people
S = _____people

Date: _____

Time: _____ min.

Interaction Code

Class.	Cat.	TG	TU	TT	TS	UG	UU	UT	US	SG	SU	ST	SS	Total	A	A_x	C	C_x
I	1														T- U- S-	T- U- S-	T- U- S-	
II	2														T- U- S-	T- U- S-		
	3														T- U- S-	T- U- S-	T- U- S-	
	4														T- U- S-	T- U- S-		
III	5														T- U- S-	T- U- S-		
	6														T- U- S-	T- U- S-	T- U- S-	
	7														T- U- S-	T- U- S-		
IV	8														T- U- S-	T- U- S-		
	9														T- U- S-	T- U- S-	T- U- S-	
	10														T- U- S-	T- U- S-		
V	11														T- U- S-	T- U- S-	T- U- S-	
Totals																		
B																		
D		DT =				DU =				DS =								
D_x																		

ROLE GIVING RESPONDING ASKING

Sub-Group/Behavior Level Ma

	T	U	S
T			
U			
S			

See reverse side for Explanation of Matrix Nomenclature

FIGURE 2

Explanation of Matrix Nomenclature

A = individual category behavior total divided by total behavior for all categories

A_x = individual category behavior total of a sub-group divided by total behavior for that category

C = individual category behavior total of a sub-group divided by the total interaction for that sub-group (D)

C_x = individual classification behavior total of a sub-group divided by the total interaction for that sub-group (D)

B = interaction direction total of sub-group divided by interaction total

D = total interaction for a sub-group

D_x = interaction direction total of a sub-group divided by total interaction for a sub-group

Sub-Group/Behavior Level Matrix

This matrix reveals the proportion of role behavior by behavior levels of information (I) suggestions (S) and opinions (O) dealt with by each sub-group.

TABULATION MATRIX

Interaction Analysis System for Identification of Group/Sub-Group Role Behavior

Group Composition: T = _____people
U = _____people
S = _____people

Date: _____

Time: _____ min.

Interaction Code

Class.	Cat.	TG	TU	TT	TS	UG	UU	UT	US	SG	SU	ST	SS	Total	A	A_1	C	C_x
I	1	7	116	77	31	6	48	99	9	0	2	9	0	404	203	T-.571 U-.400 S-.027	T-.219 U-.216 S-.059	T-.219 U-.216 S-.059
II	2	46	66	60	18	32	30	70	7	3	10	8	5	355	178	T-.535 U-.391 S-.073	T-.180 U-.185 S-.141	
	3	5	6	7	1	14	6	22	0	0	0	0	1	62	.031	T-.306 U-.677 S-.016	T-.018 U-.185 S-.141	T-.278 U-.362 S-.201
	4	24	36	22	2	29	15	44	3	1	5	1	3	185	.093	T-.454 U-.491 S-.054	T-.079 U-.121 S-.054	
III	5	8	68	106	12	12	26	54	3	0	40	55	2	386	.194	T-.503 U-.246 S-.251	T-.184 U-.126 S-.527	
	6	0	8	10	0	4	6	7	0	0	0	0	0	35	.017	T-.514 U-.486 S-	T-.017 U-.023 S-	T-.276 U-.211 S-
	7	3	43	31	2	4	13	28	1	0	8	11	1	145	.072	T-.544 U-.317 S-.137	T-.075 U-.061 S-.109	
IV	8	11	48	74	46	13	28	44	40	2	3	10	3	322	.162	T-.556 U-.388 S-.055	T-.169 U-.167 S-.097	
	9	2	0	2	0	1	2	5	0	0	0	0	0	12	.006	T-.833 U-.667 S-	T-.004 U-.011 S-	T-.203 U-.207 S-.103
	10	4	9	3	15	0	5	8	9	0	0	0	1	54	.027	T-.574 U-.407 S-.018	T-.029 U-.029 S-.005	
V	11	3	9	6	6	1	1	1	0	0	0	0	0	27	.014	T-.889 U-.111 S-	T-.023 U-.004 S-	T-.023 U-.004 S-
Totals		113	409	398	133	116	180	382	72	6	68	94	16	1987				
F		.057	.206	.200	.067	.058	.09	.192	.036	.003	.034	.047	.008					
D		GT = 1053				DU = 750				DS = 184								
D_x		.107	.388	.378	.126	.155	.240	.509	.096	.033	.37	.51	.087					

Sub-Group/Behavior Level Matrix

	T	A	S
T	.535	.479	.766
S	.039	.089	.005
C	.184	.212	.168

See reverse side for Explanation of Matrix Nomenclature

FIGURE 3

Explanation of Matrix Nomenclature

A = individual category behavior total divided by total behavior for all categories

A_x = individual category behavior total of a sub-group divided by total behavior for that category

C = individual category behavior total of a sub-group divided by the total interaction for that sub-group (D)

C_x = individual classification behavior total of a sub-group divided by the total interaction for that sub-group (D)

B = interaction direction total of sub-group divided by interaction total

D = total interaction for a sub-group

D_x = interaction direction total of a sub-group divided by total interaction for a sub-group

Sub-Group/Behavior Level Matrix

This matrix reveals the proportion of role behavior by behavior levels of information (I suggestions (S) and opinions (O) dealt with by each sub-group.